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10 CFR 50.55a (g)(5)(iii)

August 23, 2001

PSLTR: 01-0090

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Dresden Nuclear Power Station, Units 2 and 3  
Facility Operating License Nos. DPR-19 and DPR-25  
NRC Docket Nos. 50-237 and 50-249

Subject: Supplement to Relief Request for Bolting Removal when Leakage is Detected at Bolted Connection for Control Rod Drive (CRD) Housing During System Pressure Test

- Reference: (1) Letter from Preston Swafford (EGC) to the U.S. NRC, "Relief Request for Bolting Removal when Leakage is detected at Bolted Connection for Control Rod Drive (CRD) Housing during System Pressure Test Relief Request," dated March 14, 2001
- (2) Letter from Robert A. Capra (U.S. NRC) to Mr. D.L. Farrar (ComEd), "Inservice Inspection Program Relief Requests CR-16 and CR-17 Quad Cities, Units 1 and 2," dated February 27, 1996

In Reference 1, in accordance with 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(i), Dresden Nuclear Power Station (DNPS) requested approval of a proposed alternative to existing American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," on the basis that the proposed alternatives provide an acceptable level of quality and safety. Specifically, DNPS requested alternatives when leakage is detected at bolted connections in control rod drive (CRD) Housings during the system pressure test. On August 9, 2001, a teleconference was held with members of the NRC and DNPS personnel to discuss questions regarding this submittal. Based on this teleconference, the relief request has been revised to include supplemental information. The revised request is attached to this letter. This relief request is similar to relief request approved for the Quad Cities Nuclear Power Station in Reference 2.

These requested alternatives are for the third period of the third Inservice Inspection Interval for both Units 2 and 3. For Unit 2, the third Inservice Inspection Interval began on March 1, 1992, and the projected end date is January 19, 2003. For Unit 3, the Third Inservice Inspection Interval began on March 1, 1992, and the projected end date is October 31, 2002.

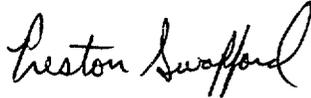
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To support a Fall 2001 refueling outage for Unit 2, we are requesting approval of these proposed alternatives by October 12, 2001.

Should you have any questions concerning this letter, please contact Mr. D.F. Ambler at (815) 416-2800.

Respectfully,



Preston Swafford  
Site Vice President  
Dresden Nuclear Power Station

Attachment: Relief Request, PR-20, "Bolting Removal when Leakage is Detected at Bolted Connection for Control Rod Drive (CRD) Housing During System Pressure Test"

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station

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**ISI Program Plan**  
**Dresden Nuclear Power Station Units 2 & 3, Third Interval**

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**RELIEF REQUEST NUMBER: PR-20**  
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**COMPONENT IDENTIFICATION**

Code Class:	1
References:	Table IWA-5250 (a)(2)
Examination Category:	B-P
Item Number:	B15.ST and B15.OT
Description:	Bolting Removal when Leakage is Detected at Bolted Connection for Control Rod Drive (CRD) Housing During System Pressure Test

**CODE REQUIREMENT**

IWA-5250 (a)(2) requires that if leakage occurs at a bolted connection, the bolting shall be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

**BASIS FOR RELIEF**

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraphs (a)(3)(i), relief is requested on the basis that the proposed alternatives provide an acceptable level of quality and safety.

Control Rod Drive (CRD) housing leakage has been primarily observed at Dresden Nuclear Power Station (DNPS) when the primary system was pressurized during the system pressure test which is performed at much lower temperatures than that seen during normal operation. History has shown that the leakage seen during the system pressure test generally decreases and stops with vessel heat up at operating pressure. Should significant leakage from the CRD housing persist, the leakage would be detected by the drywell floor drain sump, which provides a reliable means of determining leakage trends in the drywell. The leakage collected in the drywell floor drain sump is unidentified leakage. Significant unidentified leakage requires investigation and appropriate actions taken in accordance with DNPS Technical Specifications.

There are a total of 177 drives in each unit. Current maintenance practice requires that existing bolting be discarded and replaced with new bolting which has been subjected to a fluorescent MT and VT-1 examination. Bolting removed from exchanged drives has not revealed significant degradation caused by inservice corrosion since the bolting is not exposed to corrosive process fluids such as borated water. However, a number of CRD bolts were rejected during the course of these examinations because of linear indications found in the head-to-shank transition region. Metallurgical analyses of some of these rejected bolts at DNPS revealed shallow and innocuous defects caused by the manufacturing process at maximum depth of 0.036 inch with no sign of crack initiation or propagation. DNPS will continue to discard existing bolting and replace with new bolting, or perform a VT-1 examination of existing bolts prior to reinstallation. This will ensure degraded bolting is not installed during CRD maintenance.

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**ISI Program Plan**  
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**RELIEF REQUEST NUMBER: PR-20**  
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**BASIS FOR RELIEF** (Con't)

There are eight (8) CRD bolts in each drive. In the unlikely event that a bolt might fail due to manufacturing defects, a drive would not separate from its housing. In accordance with an analysis performed by General Electric Co. for Commonwealth Edison (ComEd) Company in 1991 as few as three (3) uniformly distributed and unflawed bolts can support all imposed loads and maintain the applicable ASME Code stress limits. Alternatively, the applicable ASME Code stress limits can be maintained with eight (8) bolts having defects that are 0.157 inch deep and extend 360° around each bolt shank circumference.

Relief is requested from the requirements specified in IWA-5250 (a)(2) of the 1989 ASME Section XI for CRD bolts on the basis that significant degradation of CRD bolting has not been experienced at DNPS, the bolting is not exposed to corrosive process fluid such as borated water, significant margin to failure has been shown, significant leakage from the CRD housing bolted connections can be detected, and that replacement of existing bolting with new bolting, or VT-1 examination of existing bolting, prior to reinstallation as required by Table IWB-2500-1 on CRD bolting when disassembled for maintenance, will provide an acceptable level of quality and safety.

**PROPOSED ALTERNATE PROVISIONS**

As an alternate examination, DNPS will replace existing bolting with new bolting, or VT-1 examine existing bolting prior to reinstallation during scheduled drive exchanges. Leakage from CRD housings will be monitored by unidentified drywell leakage and appropriate actions will be taken in accordance with DNPS Technical Specifications. CRD bolts will not be removed for a VT-3 examination when leakage is detected at the CRD housing flange connection during the conduct of the system pressure tests in accordance with IWB-5000.

**APPLICABLE TIME PERIOD**

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DNPS Units 2 and 3.